Environmental Science

A COMPARISON OF STANDARD FISH COLLECTION METHODS DURING A BIOASSESSMENT OF THE OHIO RIVER.

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When assessing the health of aquatic ecosystems, fish communities serve as the most viable approach for evaluating the effects of potential impacts. Physical and chemical measures may be informative but are generally inadequate measures of the potential selective pressures of pollution. Therefore, when conducting a bioassessment it is imperative to ensure a thorough sampling of the fish populations present in an area. Since 1971, The Thomas More College Field Station located in Campbell County, Kentucky has been conducting research on the fish populations of the Ohio River. Much of this research includes the collection of fish around two coal-burning power plants, both located on the banks of the Ohio River, just upstream of Cincinnati, Ohio. Collections were made using three standard methods: hoop nets, gill nets and electrofishing. Throughout the month of July 2001, hoop nets and gill nets were kept in the water from 8:00 am Monday morning to approximately 8:00 am Friday morning. Nets were checked twice daily, morning and evening. Electrofishing was performed twice a week on Tuesday and Thursday evenings (from 9:00 pm-12:00 am) throughout the same month. An analysis of the all three methods used in this summer's collections was performed to determine the overall effectiveness of each method. Furthermore, the data were examined to determine differences in species richness, composition and similarity between the sites. Overall, species abundances were highest in the gill nets and lowest in the hoop nets; while electrofishing yielded intermediate numbers. Community similarity indices revealed higher similarity among the hoop nets and gill nets relative to the electrofishing samples. The hoop nets proved effective in netting benthic species such as *Ictalurus furcatus* and *Pylodictis olivaris*; while the gill nets and electrofishing captured pelagic species such as *Dorosoma cepedianum* and *Lepisosteus osseus*. Species richness and diversity levels were highest among the electrofishing samples.